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ABSTRACT

Innovative methods are outlined for developing an outdoor farm site, which would serve as a tangible educational facility, in an urban county. Although such a facility would primarily serve an extension youth program, the environmental instruction would benefit citizens of all ages in grasping a better understanding of man's relationship to the natural environment. Such a facility would provide an ideal atmosphere to demonstrate projects relating to a farm and the urban setting and to teach environmental sciences and ecology. Facility plans and proposed costs of the farm project during its preparation and after its programs are underway have been included. Courses included in the curriculum are: The Farm and You, The Farmer and the Farm, Introduction to Genetics, Reproductive Systems, Special Programs for Physically Handicapped (Blind, Wheelchair Patient) and Educable Mentally Handicapped, Environment and Outdoor Appreciation. Processes for the evaluation and modification of programs are also included. (EA)

ED 084402

A PLAN FOR THE DEKALB COUNTY EXTENSION OUTDOOR LIVING SCIENCES LABORATORY DEKALB COUNTY, GEORGIA

A Project in Cooperative Extension Education

Submitted to

The College of Agriculture

University of Georgia

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in

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BY

MORRIS W. SHELNUTT

B.S.A., University of Georgia, 1967

MARCH, 1973

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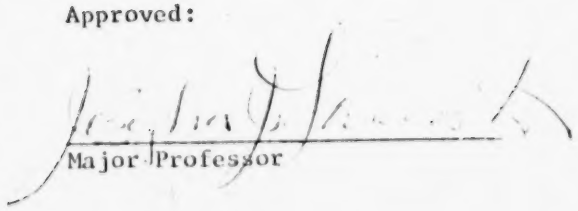
APPROVAL CERTIFICATE

OUTDOOR LIVING SCIENCES LABORATORY

by

MORRIS W. SHELNUTT

Approved:



Major Professor

Date:

4/3/73

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Also, the author must say "thanks" to the leadership and staff of DeKalb Extension Service for allowing him the opportunity of pursuing and helping him finish this project.

And last to my family for encouragement and help throughout the entire program.

ABSTRACT OF PROBLEM

OUTDOOR LIVING SCIENCES LABORATORY

by

MORRIS W. SHELNUTT

MARCH, 1973

THE PROBLEM

The purpose of this study was to devise and implement, as part of the DeKalb Extension Program, an outdoor farm site which would serve as a tangible educational facility. Even though this facility is primarily for the DeKalb Extension Youth Program, it will also serve all the DeKalb citizens.

The DeKalb Mini-Farm will be constructed on an eighteen (18) acre tract of land leased from the DeKalb Board of Education. This project in South DeKalb County will provide DeKalb County citizens a setting for almost unlimited living science experiences emphasizing agriculture, ecology, and environmental sciences.

Before an educational program based on tangible facilities can be designed, it is necessary to identify the physical objects which will be used as teaching-learning devices. Computation of expenses is the next step, and should include implementation, maintenance, and housing of the aforementioned facilities. The author has attempted to show proposed costs of the farm project during its preparation and after its programs are underway.

This study attempts to set up guidelines for curricula which would provide educational opportunities for citizens of all ages. The curricula devised can serve to amplify the physical setting of the farm, thus reinforcing the total learning environment. Terminal and intermediate objectives should meet the general goal of education dealing with man in relation to his environment. The courses should insure that the public school curricula and the local Extension Program are enhanced. Proposed methods of evaluation are intended to determine the effectiveness of specific programs and teaching techniques and to allow for modifications, revisions, additions or deletions. Similar evaluation techniques will be used for the Outdoor Living Sciences project to insure that the total DeKalb Extension Program is supported.

This facility will provide for educational programs that will enhance the total DeKalb Extension effort and provide settings for reinforcement of many learning experiences. The Outdoor Living Sciences Laboratory should serve as a unique total learning environment because of the reality of its operational capabilities, and the practicality of its philosophy. The nature of the mini-farm concept and philosophy behind its programs deserve immediate attention and development of the farm should be given top priority so that DeKalb citizens can begin to benefit from its programs and activities.

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INTRODUCTION AND PURPOSE

During the past twenty years, DeKalb County has gone through a transition unsurpassed by any other county in Southeastern United States. The county has gained in population from one hundred thousand to well over four hundred thousand. With the increased population, there was a decrease in open space. Land that was formerly open has been occupied with apartments, shopping centers, highways, subdivisions, and industrial developments.

This change is not only true with the land utilization, but the clientele of the DeKalb Extension Service has also changed.

This change is especially true in the youth phase of the Extension Program in DeKalb County. The projects for youth have had to be urbanized to fit the needs of DeKalb's younger citizens. One area of youth work where this has been most obvious is in the field of the natural and environmental sciences.

An example of urbanizing a project for the youth phase of the program would be the "Forestry" project. Rather than expecting a child to work with forest management practices or in diseases of acres of trees, the new project concept for urban youth is to consider the few trees in his home yard. The urban child would be more interested in the effects on his environment if the trees were cut down to widen his street.

A child growing up in the urban environment does not have the opportunity to experience encounters with the living sciences other than perhaps in association with a household pet or a small yard.

This child rarely begins to appreciate his natural environment even though he is told about it or reads about it in school. Until a child can see something more meaningful, he assumes that his food is manufactured and his milk comes from a machine just like a soft drink.

The need for a facility to teach growing children about the environment, agriculture, and the living sciences has never been more pressing. A well designed facility can provide many more educational experiences for both children and adults than can a walk in a park, made of concrete. Actual on-the-site experiences can be more meaningful and lasting to all age groups.

An outdoor laboratory with an animal farm setting has unlimited possibilities for both formal and informal learning situations. The primary function of this facility will be to complement the school system's science study program by providing for organized learning situations in both classroom and field tour settings. Also, it provides a great potential for the study of ecology and the environment by adult citizens in an informal setting.

Not only will the outdoor living sciences laboratory offer experiences in ecology for all groups, it will also give them an opportunity to become aware of the importance of agriculture. Many of DeKalb County's citizens have never had the experience of seeing a farm in operation. They have very little background to relate the importance of agriculture to their daily lives. The DeKalb Mini-Farm will be a tangible educational facility that will help to develop a knowledge and appreciation of the processes involved in producing agricultural products. The urban environment offers few opportunities

to witness and understand such operations without a special educational facility.

By having this facility, the DeKalb County Extension Service will be able to provide educational experiences that will complement the school system's programs and at the same time vastly improve the Extension Program in DeKalb County. The facility, when staffed and equipped, will enable Extension staff members to carry groups to the site for instruction and have actual specimens for observation. In addition, it will provide a setting for both result and method demonstrations in the exercises of everyday urban living.

From this study it is hoped that the DeKalb Extension Service will gain some basic and fundamental guides for programming and using an "Outdoor Living Sciences Laboratory." On completion of the project, it is expected that the DeKalb Extension Service will have a set of curriculum guides for use in operating the laboratory.

DEFINITION OF TERMS:

Outdoor Living Sciences Laboratory: an eighteen acre tract of land to be developed by DeKalb Extension Service as an educational center in an animal farm setting.

Mini-Farm: refers to the Outdoor Living Sciences Laboratory and will be used interchangeably.

Program: total of the educational activities conducted at the Outdoor Living Sciences Laboratory.

Curriculum: a method by which the overall objectives will be met.

Evaluation: the gathering, recording, and interpreting evidence of student progress toward achieving educational goals

Modification: process of changing a course to make it more responsive to the needs of students and more productive in terms of achieving stated educational objectives.

FACILITIES

The DeKalb Outdoor Living Sciences Laboratory will be established on approximately eighteen (18) acres of land in South DeKalb County. The property is located at the intersection of Panthersville and Clifton Roads. It is west of the South Campus of DeKalb College and bounded by lands owned by Georgia State University and DeKalb County. The adjacent lands will eventually be used as a water pollution laboratory and a recreation center and golf course.

The land was previously part of the Honor Farm of the United States Penitentiary in Atlanta. The prison had been utilizing this property as part of a hog farm to produce pork for the prisoners. When the Department of Justice decided to close down the Honor Farm operation in DeKalb County and start purchasing food, the total five hundred (500) acres was to be given to various local governmental agencies.

Several agencies requested all or part of this valuable property. The DeKalb Board of Education requested and received a parcel of the land totaling one hundred eight (108) acres. In requesting the land, the DeKalb Board of Education had to submit a plan for proposed utilization of the property. Among the plans for utilization was a proposed mini-farm to be a cooperative effort between the Board of Education and the DeKalb Extension Service.

The DeKalb Mini-Farm will be constructed on the designated eighteen (18) acres of land deeded to the DeKalb Board of Education and leased to the DeKalb Board of Commissioners for a term of fifty (50) years with provisions for lease renewal at the end of the period. In

the terms of the lease, the County Extension Agent represents the Board of Commissioners and the Director of Fernbank Science Center will represent the Board of Education in matters relating to the farm.

On the acreage to be utilized as the Mini-Farm, there will be a dwelling house of approximately eighteen hundred (1800) square feet. This house is to be used for the caretaker's home. This will provide full-time security and protection for the grounds and the livestock. The caretaker will preferably be someone with a background in animal farming and capable of supervising the laborers and occasionally being a tour guide and instructor.

In addition to the house, there will be a barn which will include office space, rest rooms, classrooms, lecture auditorium, laboratory facilities, and stalls for the animals. This structure, with a gambrel type roof to provide a loft, will serve as the main facility for both formal and informal instruction.

Plans for the farm also include a hog house, poultry house, and machine shed with a small shop. These structures will add both realism and utility to the project. With the shop, it is hoped that much of the maintenance and repairs to equipment can be done on site to demonstrate these functions and save time and money for the project.

All of the buildings except the hog house will be located within a three (3) acre section of the farm. The rest of the property will be used as pasture and cropland.

Approximately one-half of the cost of the project will come from a cost-sharing grant of the U. S. Department of Health, Education and Welfare. The other half will be a county capital allocation and

in-kind contribution of labor and materials from the DeKalb Extension Service, the DeKalb Board of Education, and the DeKalb Board of Commissioners. Also, there will be donations from clubs, institutions, associations and individuals in the community.

The total cost of establishing the DeKalb Mini-Farm is estimated to be Two Hundred Forty-Seven Thousand Seven Hundred Forty-Two Dollars ($247,742.00) with an annual operating cost of Sixty-Four Thousand Five Hundred Dollars ($64,500.00). Following is an itemized list of estimated expenditures for development of the project and the annual operating cost.

ESTIMATED COST OF DEVELOPING
THE OUTDOOR LIVING SCIENCES LABORATORY
FOR DEKALB COUNTY

Construction-Family Dwelling 2,000 sq. ft. @ $18.00 per foot of heated space, 3 bedroom, 2 bath	$ 36,000.00
Landscaping of house site	1,500.00
Barn, Gambrel Roof 4,000 sq. ft. @ $8.00 per foot	32,000.00
Septic tank and disposal field	2,000.00
21 Automatic Waterers @ $20.00 each	420.00
21 feed troughs @ $50.00 each	1,050.00
2 Heat Pumps @ $550.00 each	1,100.00
Hog House--Farrowing and Feeding Renovation of Existing Structure 10' x 24' @ $5.00 per foot	1,200.00
Poultry House 12' x 14' @ $5.00 per foot	740.00
Cages, waterers and feeders	500.00
Two dog houses with pens	300.00
One machine shed w/classroom 2,000 sq. ft. @ $8.00 per foot	16,000.00
40 chairs @ $50.00 per chair	2,000.00
Desk and chair (instructor's)	300.00
Visual Aids: Blackboard, Movie and Slide Projectors, Screens, Models, Mock-ups, Overhead Projector	6,000.00
Basic Soil Test Lab; Photometer, pH Meter, Grinder	4,000.00
Miscellaneous Lab Equipment: Tubes, Beakers, Burners, Chemicals, etc.	1,000.00
480 AMP A C Welder Generator	680.00
295 AMP ARC Welder	215.00
3 Helmets @ $12.00 each	36.00
Oxyacetylene Cutter and Welder	155.00
Supporting Material	6,000.00
Miscellaneous Hand Tools	250.00

Drill Press and Motor	520.00
Accessories for Drill Press	222.00
Metal Turning Lathe	760.00
Accessories for Lathe	650.00
Hay Baler	2,400.00
Power Orchard and Pasture Sprayer	1,500.00
14' Tandem Axel Trailer for Tractor and Equipment	1,800.00
Paved Road from Clifton Springs Road to Farm	85,000.00
Electric Installation to all Structures	2,000.00
Water Installation	12,000.00
12 to 14 fruit trees @ $10.00 each	140.00
Fencing of property and plots	
18 rolls 47" hog wire @ $30.00	540.00
5 rolls barbwire @ $12.00	60.00
470 fence posts @ .85	380.00
labor for installation of fence	300.00
establishing twelve acres pasture and row crops @ $60.00 per acre	7,200.00
Ford 2000 Tractor (Agricultural)	4,200.00
Five foot rotary mower	580.00
Sickle mower - 501-30	660.00
Wagon (trailer)	400.00
Post hole digger	400.00
Disc harrow - CA-724	480.00
Smoothing harrow - 11-172	490.00
Eight foot fertilizer spreader	350.00

Animal Purchase

Two Angus Cows @ $500.00 each	1,000.00
Two Hereford Cows @ $500.00 each	1,000.00
Two Shorthorn Cows @ $500.00 each	1,000.00
Two Charolais Cows @ $500.00 each	1,000.00
Two Goats @ $15.00 each	30.00
Two OIC Hogs @ $70.00 each	140.00
Two Yorkshire Hogs @ $70.00 each	140.00
Two Spotted Poland-China Hogs @ $70.00 each	140.00
Two Hampshire Hogs @ $70.00 each	140.00
Two Tamworth Hogs @ $70.00 each	140.00
Two Saddle Horses @ $500.00 each	1,000.00
One Mule	200.00
One Pony	200.00
Two Hampshire Ewe @ $50.00 each	100.00
Two Suffolk Ewe @ $50.00 each	100.00
Holstein Heifer and Bull	1,500.00
Jersey Heifer and Bull	1,500.00
Guernsey and Bull	1,500.00
Two Beagle Pups @ $100.00 each	200.00
Two Pointer Pups @ $100.00 each	200.00
10 Chickens @ $2.00 each	20.00
2 Ducks	4.00
2 Turkeys	10.00

TOTAL COST OF DEVELOPMENT----------$247,742.00

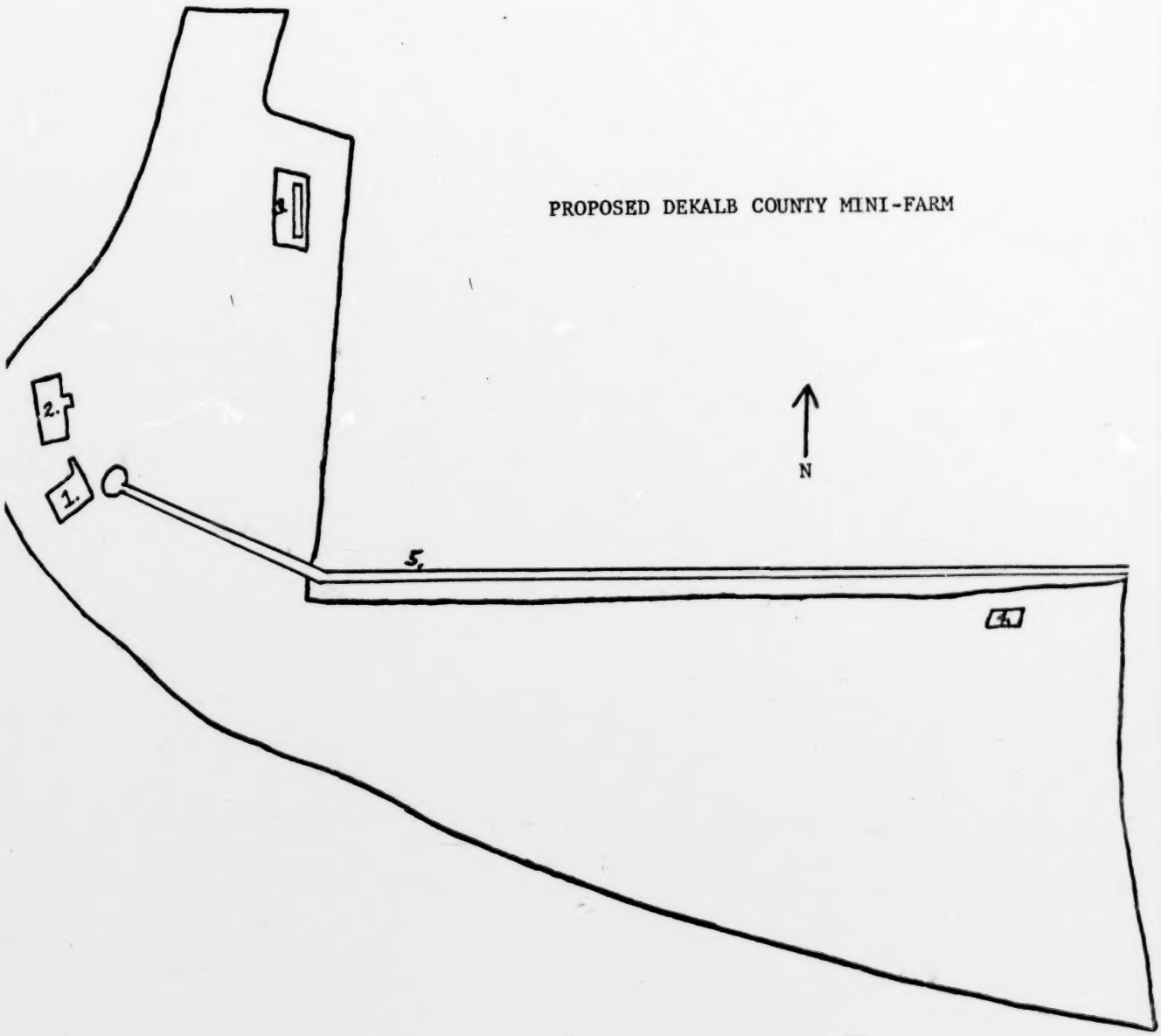
ESTIMATED ANNUAL COST OF OPERATION

Personnel

Professional	$13,000/yr.
Supervisor	7,500/yr.
4 Laborers @ $6,000	24,000/yr.
	$44,500

Estimated Annual Operating Cost	$20,000
TOTAL ANNUAL OPERATING COST	$64,500

PROPOSED DEKALB COUNTY MINI-FARM



1. House
2. Barn with classroom
3. Machine shed with security fence around it
4. Hog parlor
5. Road and turn-around leading from DeKalb County property

CURRICULUM

A curriculum must be developed that will contribute effectively to achieving the total objectives of the Mini-Farm and offer educational activities that are so needed in an urban environment. The curriculum must be diverse enough to span the total spectrum of outdoor environmental studies available through full utilization of the mini-farm concept. The curriculum must have programs that are designed for the ages and educational backgrounds of various groups as well as to support and enhance their total education in the living sciences.

The mini-farm concept offers opportunities for learning in all phases of the living sciences. It must be realized that for any one group there are numerous possibilities for programs. Programs can be conducted in the classroom, as field trips, or as a combination of the two. Formal and informal educational activities are possible on the Farm site.

Since this is a project to enhance and support the public school science curriculum and the local Extension Program, it is hoped that a majority of the programs will be in a less formal setting. The curriculum as prescribed by the advisory group must also be flexible enough to fulfill needs of other citizens not engaged in public school curricula.

This project can fill not only school science needs, but even more will fill a need in the DeKalb Extension 4-H/Youth Program for on-the-site instruction in some of the living sciences. By having this laboratory, the DeKalb Extension Service agents will be able to expand the range of subjects dealt with in the local Extension Program. Much of

the Extension Program will be structured around recommendations of the advisory group for the Outdoor Living Sciences Laboratory.

The advisory group will consist of at least ten (10) individuals with an interest in environmental education and who are proficient or professional in this field. The group should be representative of the fields of animal science, agronomy, veterinary science, ecology, environmental design, and various educational agencies or services. The chairman of the committee should be a University of Georgia Extension Service staff member assigned to DeKalb County. Principle duties of the chairman will be to coordinate the establishment and implementation of curricula for the laboratory.

To insure that the curriculum plan will be completed by the operational date for the Mini-Farm (September, 1974) periodic meetings will be held. When the program is underway, the advisory group will meet periodically to revise and upgrade the curriculum.

In working out curricula for environmental education, several points must be considered:

(1) Environmental education is concerned with the nature of man, the nature of the biosphere in which we live and the interrelationships between man and the biosphere.

(2) In an age when, as the result of human arrogance, man has placed himself outside of the beautifully interrelated systems of nature because of pollution, over-population, with its many resultant strifes, environmental degradation and over exploitation of limited resources, it is imperative that people become educated to the point of a basic environmental literacy. It is a task for the total educational continuum.

(3) During the school years, it is important that every child be given as wide exposure as possible to the natural living environment.

With these points considered, it is important to realize that environmental education is not a new subject to be taught, but is an "umbrella" under which many disciplines can be drawn upon.

Given a general goal of providing education involving relationships with the environment, the advisory group will develop a curriculum based on behavioral objectives to be met by the overall curriculum and instructional programs. Specific elements in the curriculum should be based on the age and/or learning capacity of the students. A method of evaluating courses and curricula as well as the capacity of learners should also be developed by the advisors in order to strengthen and modify the overall procedures.

The following are examples of curriculum guide outlines for courses which could be used in the Farm's educational program:

OVERALL OBJECTIVE: Given the opportunity to hear lectures and observe demonstrations on an actual farm setting involving topics in agriculture, ecology, animal science, etc., the learner will grasp a better understanding of man's relationship to the natural environment and the implications of that relationship.

THE FARM AND YOU
(Grade Level K-3)

Course Description: This program will be a field trip identification of the farm demonstrating its purpose, its equipment and its animals.

A. Who are farmers? (introduction to program)
   1. What makes a farmer?
   2. Where are most farmers in the U. S.? Why?
   3. The farmers schedule

B. Farm Animals (I.D. and Tour)
   1. Cow - milk, beef, etc.
   2. Pig - bacon, ham, pork, etc.
   3. Horse - worker, fun, etc.
   4. Chicken - eggs, meat, etc.
   5. Wild animals found near farm (birds, rabbits, deer, etc.)

C. Farm Equipment (I.D. and Tour)
   1. Basic Tools
      a. Garden Tools - hoe, shovel, rake, etc.
      b. Handyman Tools - hammer, saw, screwdriver, etc.
   2. Tractor
      a. Its uses
      b. Its implements

D. Question Period and Review
   1. Students ask questions of instructor
   2. Instructor reviews tour
   3. Instructor asks oral questions of students to measure the amount of knowledge retained

APPROXIMATE TIME: 2 hours

THE FARMER AND THE FARM
(Grade Level 4-6)

Course Description: This program will be a lecture on the role of the farmer in producing, marketing, transporting, and in financing the farm operation in conjunction with a field trip of the farm site.

A. Short lecture as "warm-up" to tour (visual aids included)
   1. Identification of the farmer
      a. Duties as manager and entrepreneur
      b. Who does the farmer serve?
   2. Farm Management
      a. Products and production
      b. Marketing
      c. Transportation
      d. Financing

B. Field trip of farm site in relation to previous and continuing lecture
   1. Products of the farm (identification)
      a. Cow - beef, milk and related products
      b. Crops - vegetables for the table
      c. Pig - pork, ham, bacon
      d. Poultry - meat, eggs and related products
   2. Marketing
      a. Harvesting the product (continued lecture)
         1) Equipment
         2) Labor
      b. Products selection and grading
      c. Transportation
         1) Trucks
         2) Rail

3. Financial Aspects

   a. Parity prices and government support

   b. Personal investment

C. Question Period and Review

   1. Students ask questions of instructor

   2. Instructor reviews and asks questions of students to measure knowledge retained

APPROXIMATE TIME: 2 hours

INTRODUCTION TO GENETICS
(Grade Level 7-9)

Course Description: This program will be an introduction to basic genetic principles and discussion of agricultural uses of selective breeding, followed by a field exercise to reinforce the lecture.

A. Definition of terms (lecture with printed handout)
   1. Genetics
   2. Heredity
   3. Traits and characteristics
      a. Dominant
      b. Recessive

B. Selective Breeding (lecture continues)
   1. Advantages
   2. Disadvantages

C. Field Exercise (begin field trip in conjunction with lecture)
   1. Physical characteristics of animals (stall area)
      a. Size
      b. Color
      c. Production
   2. Plant or crop characteristics (garden area)
      a. Size
      b. Shape
      c. Production

D. Question Period and Review
   1. Students ask questions concerning any part of program
   2. Instructor reviews and asks questions of students to measure knowledge retained by students

APPROXIMATE TIME: 2½ hours

REPRODUCTIVE SYSTEMS
(Grade Level 10-12)

Course Description: This program will be a lecture in conjunction with laboratory exercises to acquaint the learner with basic sexual organs of the animals and their function in the reproductive system. Charts, models and specimens will be utilized to provide the necessary visual instruction.

A. Introduction and definition of basic terms (lecture)
    1. Fertilization and its connotations
    2. Differences between various animal reproduction systems and why they are important

B. Organs of reproductive system (lecture using charts)
    1. Female Organs
        a. Location
        b. Function
    2. Male Organs
        a. Location
        b. Function

C. Dissection (lecture during laboratory exercise) of fetal pig concentrating on reproductive system

D. Question Period and Review
    1. Students ask questions concerning any part of lecture
    2. Instructor reviews and asks questions of students to measure information retained

APPROXIMATE TIME: 3 hours

SPECIAL PROGRAM FOR PHYSICALLY
HANDICAPPED - BLIND
(Age Group of 5-9 Years)

Course Description: This program will be a brief introduction explaining the farm site and the animals to be demonstrated followed by a field trip allowing and encouraging the student to use his senses of touch, hearing, and smell to better understand the farm environment.

A. Introduction

1. Basic explanation and definition of a farm
2. Explanation and instruction for the field trip including description of animals and facilities to be encountered during the visit

B. Tour

1. Animals
   a. Students are brought to an area specific to one type of animal and asked to identify same
   b. Students are encouraged to touch the animal, listen to it, and become aware of any odors connected with it
   c. Instructor describes what the students are sensing, gives pertinent information about the animal, and asks questions to encourage involvement
   d. Instructor guides students to the next animal site
2. Facilities
   a. Students are guided to a tractor which has not been started and are asked to identify same by touching
   b. Instructor explains functions of the tractor and its importance to the farm. After taking safety precautions, the instructor starts the engine.

c. Instructor turns off the engine of the tractor, reviews information, and asks questions of the students

C. Question Period and Review

1. Students ask questions concerning any part of the program

2. Instructor asks questions of students to determine the amount of information retained (A method of evaluation could include sound recordings of animals and facilities just visited by the student, followed by the students identification of that animal or facility specific to the recording.)

APPROXIMATE TIME: 2 hours

SPECIAL PROGRAM FOR THE PHYSICALLY HANDICAPPED - WHEELCHAIR PATIENT

Course Description: The course description will be the same as that used for any specific curriculum based on overall age and learning capacity of the students. The only changes from the basic format may include the modification or elimination of certain projects or activities which are determined physically or practically not feasible for these students.

SPECIAL PROGRAM FOR THE EDUCABLE MENTALLY
RETARDED AND/OR SLOW LEARNERS
(K-3 Learning Capacity)

Course Description: This program will be a field trip identification of the farm; its purposes, its equipment and its animals on a pre-elementary level.

A. Introduction
   1. Who is a farmer?
   2. How do farmers help us?

B. Tour
   1. Identification and uses of farm animals
      a. Cow - milk, beef, etc.
      b. Pig - bacon, ham, pork, etc.
      c. Horse - work, fun, etc.
      d. Chicken - eggs, meat, etc.
      e. Instructor asks and answers questions
   2. Identification and uses of farm equipment
      a. Tractor and its implements
         1) Cultivation
         2) General farm upkeep
      b. Tools of the trade
         1) Garden Tools - hoe, rake, shovel
         2) Handyman Tools - hammer, saw, wrench, screwdriver, etc.
      c. Instructor asks and answers questions

C. Question Period and Review
   1. Students ask questions of instructor
   2. Instructor reviews entire program
   3. Instructor asks questions of students to determine amount of information retained

APPROXIMATE TIME: 2 hours

ENVIRONMENT AND OUTDOOR APPRECIATION
(Adult Groups)

Course Description: This program will be a lecture on outdoor living sciences with emphasis on ecological problems in conjunction with a short field trip of the site and its facilities and followed by a discussion period.

A. Lecture

1. Habitat and Environment

a. Principle elements of wildlife production

1) Food

2) Cover

3) Water

b. Destruction of habitats by nature and man

1) Floods, lightning, etc. are means of balancing

2) Man's control of his environment alters the habitats of other animals and makes him the master of all game

3) Nature's way of altering environment is instinctive (ex: beaver) where man's alterations are deliberate

2. Habitat Manipulation

a. Justification for domestication

b. Land control and its effects

c. Hunting and the gun

d. Wildlife feeding

e. Pesticides

. The future for wildlife

a. Should other species adapt to man?

b. Should man adapt more naturally with other species?

c. Have we gone too far?

4. What can we do?

   a. Remember food, cover, and water

   b. Do not condemn regulated hunting and fishing

   c. Demand an end to wholesale killing of predators

   d. Demand laws prohibiting shooting from cars and airplanes

   e. Don't make pets of wildlife

   f. Avoid needless killing

   g. Insist on enforced protection of wild animals

   h. Join a conservation organization and be active in its programs

B. Tour

C. Discussion Period

   1. Instructor will review and begin discussion

   2. Evaluation of course will be based on discussion to include questions on topics introduced by students

APPROXIMATE TIME: 2 hours

Given that the overall objective is to provide the opportunity for the students to hear lectures and observe demonstrations on an actual farm setting involving topics in agriculture, ecology, animal science, etc., the learner will grasp a better understanding of man's relationship to the natural environment and the implication of that relationship.

The curriculum guide examples are designed to fulfill the goals stated in the course descriptions and to achieve the stated objective. For purposes of evaluating courses in the curriculum, consideration of the learning situation, the learning task, and the method of evaluating the task is essential.

The learning situation is the setting in which the student will be exposed to the learning experience. The learning environment for the examples cited for the curriculum outlines includes the laboratory, the classroom, and various facilities indigenous to the farm. The learning situations vary according to the age and/or learning capacity of the students. Providing students with an atmosphere conducive to learning is the foremost objective in planning the curriculum.

The learning task involves specifically that which is expected to be done by the student in the learning experience. Tasks as outlined previously include participation ranging from lectures, demonstrations and laboratory experiments to discussions, tours, and even identification by touch for the blind. Learning experiences vary according to the capacities of the students involved in the specific program. The learning situations are designed to be informative and at the same time interesting so that the students will be more receptive to the overall learning experience.

The method of evaluating the experience includes oral question and answer periods. Evaluation is primarily concerned with determining the amount of information retained by individual students and to serve as a guide to the overall program so modifications for future courses can be made.

EVALUATION

Even before completion of the physical facility and implementation of the program at the Outdoor Living Sciences Laboratory, methods should be developed by which the programs can be evaluated and modified if they are to be effective.

The process of evaluating and modifying programs presented at the DeKalb Outdoor Living Sciences Laboratory will include four steps:

Step 1) Before any program is presented as part of the total curriculum, the advisory group will discuss the course description and outline with the instructor.

Step 2) As stated in the course outline, each program will have a period set up for a review of the presentation followed by a question and answer period. This will allow the instructor to assess the amount of the information retained by the students and allow for evaluation of the material.

Step 3a) (For School Groups) Each teacher will be asked to allow the students a chance to critique the program in their next regular classroom period. Students' comments will also be used in the total evaluation.

Step 3b) (For Other Groups) When other groups visit the Outdoor Living Sciences Laboratory, the leader of this group will be asked to allow the organization to critique the program and send their comments to the Chairman of the Advisory Group. These groups will be primarily adult organizations such as civic clubs, garden clubs, etc. This will allow for a feedback from other portions of the DeKalb citizens.

Step 4) The advisory group will discuss the program after its implementation. The group will consider both the instructor's comments from step 2 and the various groups from step 3a or 3b. With these data, the group can decide on the necessary additions, deletions or modifications to upgrade the program. Also, the group chairman can compile these comments and make reports to various supporting agencies to document the value of the program.

Evaluation should be an integral part of the programming process. Through evaluation of the programs presented at the Outdoor Living Sciences Laboratory, modification and additions to the programs can take place. This will be the task of the advisory committee with the aid of the Mini-Farm staff. Before the advisory group can effectively evaluate a program and then decide whether or not modification is necessary, appropriate standards and values must be established.

Values or standards are objects, activities, or situations which are liked, desired, or approved by human beings. Facts can be determined to be true or false, but values can not.[1] Proper evaluation will determine how closely the idea or object meets these standards or values.

The development of techniques for evaluation of the programs should closely follow the writing of objectives which are outlined within the course descriptions for specific programs. The objectives stated within the course descriptions will indicate what is to be evaluated and will insure direct measurement of what is being taught.

Evaluation of the curricula can serve two purposes. First, it tests the degree to which each student has achieved the objectives.

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[1]Lionel Ruby, Logic (Chicago: Lippincott, 1960), p. 473.

A high level of student achievement is the ultimate criterion for the success of the program.[2] Student retention of information presented in the program can be measured using various techniques including paper-and-pencil testing, oral question and answer periods, discussion, and audio visual materials. The nature of the specific program will often determine the best method of testing to measure the achievement of the student.

The second purpose of evaluating the curricula is to determine if there are any weaknesses in the instructional design that would need modifications. The students will serve as the primary resource for evaluating the instructional programs. Direct observation of students during the learning experience, and results of tests used to determine the amount of material retained can reveal deficiencies the instructional design.

Common deficiencies in curricula include the instructional pace which is too fast or too slow, and the topic itself which is boring, confusing, or too difficult. Pilot tests in the form of "dry runs" or "try out" phases should be conducted with a representative sample of the student group under normal conditions before the plan is implemented with an entire student group to determine if revisions in the instructional design are desirable. The procedure of trial testing should relate not only to the suitability of objectives, subject content, teaching methods and materials, but also to the roles of personnel, the use of facilities and equipment, schedules, and other factors that all together affect the optimum performance for achievement of the objectives.[3]

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[2]Kemp, Instructional Design (California: Lear Seigler, 1971), p. 38.

[3]IBID, p. 41.

Evaluation of the curricula for the Outdoor Living Sciences Laboratory should insure the programs' enhancement of the public school curricula. The curricula must include a wide range of factual-content courses; which, with their diversity, encourage the student to become involved in unique learning experiences. The key to the uniqueness of the overall program is the diversity within each specific instructional plan.

SUMMARY AND RECOMMENDATIONS

To be able to have an Extension Program in an urban county such as DeKalb, innovative methods will have to be presented such as an Outdoor Living Sciences Laboratory. With the farm setting, the possibilities for an urban Extension Program are almost endless. Almost any subject dealing with the physiological sciences can and should be taught.

DeKalb citizens of all ages can benefit from this type of environmental instruction that involves both classroom and field trip exercises. This type instruction will especially add to the local Extension Program in DeKalb County.

Since the Extension Program is already involved in the living sciences, this facility will be widely used by the DeKalb Extension Service staff. This facility will provide an atmosphere as never before for teaching environmental sciences and ecology. In the Extension Youth Program, 4-H leaders will be able to demonstrate many of the projects relating to a farm and the urban setting. Also, the 4-H groups will be able to understand causal relationships and perform result demonstrations showing effects such as over-population on water and air pollution.

The adult phase of the DeKalb Extension Program will include using this facility in several ways. One is to have field tours on the farm for the study of environmental sciences.

It is firmly believed that this facility will not only set a precedent for urban Extension work, but also insure for an even stronger

Extension Program in DeKalb County, Georgia. It is strongly recommended that this facility be given top priority for immediate feasible implementation.

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